HYBRIDS

Beginning on September 1, 2018, hybrid and electric cars and trucks will have to make noise when running on an electric motor. The National Highway Traffic Safety Administration (November 14, 2016) issued the final rule to comply with the Pedestrian Safety Enhancement Act of 2010 that required sound standards. The new rule will require the vehicle sounds to change as the vehicle accelerates and decelerates to mimic an internal combustion engine in an effort to aid pedestrian detection. It also requires a sound for a hybrid or electric vehicle at idle. The new rule is expected to eliminate 2,390 pedestrian and cyclist collisions with hybrids and electric vehicles. The standard is expected to save $294 million in reduction to loss of life alone.

Seattle Fire Department has had great success with hybrid ambulances, the Journal of Emergency Medical Services (November 18, 2016) journaled. The Fire Department has an unreported number of hybrid ambulances that reduced carbon emissions by 19% in nine months. Because of the success, the City will convert 10 Ford Transit vans to hybrid for use in other departments.

Cummins, Inc., famous for diesel engines, is working on two plug-in hybrid projects, Green Car Congress (Parker, November 22, 2016) says. Cummins, the Ohio State University, PACCAR, and two federal labs are working on a medium duty commercial plug-in hybrid that is supposed to save 50% in fuel over conventional medium duty trucks. In another project, Cummins is working with a Canadian transit system to develop two different plug-in hybrid buses.

Toyota, which depended on nickel hydride batteries for its hybrids, is finally working on lithium-ion batteries, Reuters (Shirouzu, November 24, 2016) reports. It seems that one of the problems with lithium batteries is that they “move unevenly” and bunch up in electrodes. This limits battery life, reduces vehicle range, and may be why lithium batteries are susceptible to overheating and catching on fire. Toyota hopes to solve these problems which could increase range by 15% and extend battery life. They also hope to have an all-electric car by 2020.
ELECTRIC VEHICLES

The United Kingdom (October 23, 2016) is now giving grants of up to £20,000 ($24,384.30) for plug-in electric work trucks. There has been a grant available for trucks under 3.5 tonnes¹ (7,717.5 pounds in the United States) however the UK government is extending the grants for heavier vehicles in hopes of improving air quality in cities.

British Columbia, our neighbor to the north, got a C- on its electric car policy report card from Simon Fraser University, the Vancouver Sun (Saltman, November 15, 2016) shines. Simon Fraser's Sustainable Transportation Action Research Team graded all Canadian provinces and the Federal Government for progress towards the goal to have 40% of all car sales to be electric by 2040. Quebec earned a B-, while Ontario and BC each got a C-. Alberta received a D and the remaining six provinces failed. Canada, as a whole, earned a C-.

Garbage trucks have come a long way. Chinese electric car maker BYD’s U. S. subsidiary and Wayne Engineering are making a fully-electric refuse truck, Charged (Morris, November 21, 2016) charges. The electric truck can get 100 miles on a charge and can fully charge in 2 and a half hours.

Mark your calendar: the Electric and Hybrid Vehicle Technology Expo Europe is scheduled for April 4-6, 2017 in Stuttgart, Germany. You can also attend the Battery Show at the same time. If you can't make it to Stuttgart, you can attend the Electric and Hybrid Vehicle Technology Expo North America in Novi, Michigan, September 12-14, 2017. For more information visit the website here.

The International Council on Clean Transportation (ICCT) released its report identifying the leading regional electric vehicle markets in the United States, which they call Identifying the Leading Regional Electric Vehicle Markets in the United States (Kwan, Lutsey, Slowik, & Jin, November 10, 2016). The study looks at the metropolitan areas with the highest share of electric vehicle sales and compares them with each other and the rest of the United States. They identify the four highest areas in each region, Midwest, Mountain, Northeast, South, West, and California. California gets its own region because it accounts for half the electric sales in the U. S. Unlike previous similar studies, which concentrated on large metropolitan areas, this study also included small and medium size cities. The study, the authors say, "demonstrates and provides examples of the building blocks that are helping to develop electric vehicle markets across the United States” (p. 11). It appears that State regulatory policy, particularly California’s Zero Emission Vehicle policy, which several states subscribe to, is one of the biggest drivers. It opens markets for a wider variety of models. The variety of models, the authors say, is a limiting factor. The second finding is State financial incentives are a major incentive. The authors cite Athens and Atlanta, Georgia, as a prime example. The two cities were two of the leading areas in the South, until the state removed financial

¹ The tonne, or metric ton, is about 2,204 pounds. The tonne is not to be confused with the British ton of 2240 pounds, also known as the long ton. The U.S. ton, the British ton’s little brother and known as the short ton, is 2,000 pounds. There is also measurement, register, water, wheat, and timber tons, but those are measures of volume, not weight, so we’ll save those for another day.
incentives. This act, according to the authors, “essentially halted the market there” (p. 12). Charging infrastructure, while important, was lower down on the list. While the leading cities had better public charging infrastructure than their regions had, it is seen more as a policy statement, since most charging is done at home.

ALTERNATIVE FUELS

Toyota is working on hydrogen fuel cell heavy duty trucks, Trucks.com (O'Dell, November 2016) says. The company, which has a fuel cell passenger car available in California, believes that the power system can easily be modified to trucks. Toyota will begin selling fuel cell buses in 2017 and will put 100 fuel cell buses on Tokyo’s roads by 2020, for Tokyo’s Olympics.

The State of Connecticut has put another $2.7 million into its rebate program, the Hartford Courant (Singer, November 19, 2016) currently states. Under the Nutmeg State’s rebate, Fuel cell vehicles get a rebate of $5,000. Plug-in hybrids and battery electric vehicles get from $750 to $3,000 based on the size of the car’s battery.

General Motors is expanding its natural gas heavy duty pickup and vine lines to more than 25 models, Work Truck (November 21, 2016) says. General Motors has Power Solutions International install compressed natural gas or propane autogas for fleet customers. Trucks will be available in the first part of 2017.

Redmond, Washington, home to some obscure computer outfit, has retrofitted ten of its city trucks to propane autogas, Work Truck (November 9, 2016) says. The trucks have saved $1 per gallon of gas equivalent and reduced carbon emissions by 10%. Redmond will reevaluate the program in twelve months.

The Environmental Protection Agency has increased the amount of biofuel that must be blended into the gasoline and diesel supply, Bloomberg (Dlouhy, Parker, & Natter, November 23, 2016), blogs. Under the new rules, gasoline and diesel refiners have to put 19.28 billion gallons of renewables into their fuel next year. Of that, 15 billion has to be corn ethanol, which makes Corn Cob Bob2 (pictured) very happy. Refiners and others are not so happy. Many engine manufacturers say that blends above 10% will damage engines. Ethanol is not suitable for maritime engines. The refiners say that the new requirements will force ethanol over the 10% “blend wall.”

COMING TO A LOCATION NEAR YOU: The latest news on new charging stations which may or may not be somewhere close to you.

United States: New York City will establish a 25 charger network that should be operational by March 2018, QNS (Matua, November 21, 2016) notes. Each borough of

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2 Mr. Bob was formerly the mascot of the Canadian Renewable Fuels Association and was an informal mascot for its U. S. counterpart, the Renewable Fuels Association. He went on to be Director of Communications for the former Prime Minister of Canada Stephen Harper.
the City will get at least two chargers. Most charging stations in New York are privately owned.

**Around the World:** The City of Vancouver\(^3\) is putting 3 million loonies ($2,243,829.47) into electric car chargers, *CBC News* (November 16, 2016) notes. The City will build out its charger network over the next 5 years.

Four European automakers, Volkswagen, Daimler, BMW, and Ford’s European Division, have created a joint venture to create a 400 charging station network, *Reuters* (Cremer & Woodall, November 29, 2016) reports. The automakers hope the network will increase electric sales in Europe. Recently, the German government provided substantial subsidies for electric cars, but pressured German automakers to develop electric car infrastructure in return. The joint venture is seen as sealing the deal.

**OTHER TECHNOLOGY**

Zip.

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**ARTICLES REFERENCED**


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\(^3\) The one in Canada, not Washington State.


That’ll do.